

CLAIMS

1. A wireless LAN comprising an access point, a plurality of mobile communications devices requiring data communication with the access point, and a controller for controlling the supply of data communication to the mobile communications devices, the controller being such as to set up a peer-to-peer connection between a first mobile communications device already receiving a data communication supplying a given service and a second mobile communications device requiring that service.
2. A wireless LAN as claimed in claim 1, wherein the controller includes a software agent associated with the access point.
3. A wireless LAN as claimed in claim 1, wherein the access point includes a plurality of wireless technologies for data communication with mobile communications devices.
4. A wireless LAN as claimed in claim 3, wherein the wireless technologies include 802.11a, 802.11b, Hiperlan/2, Bluetooth and Home RF.
5. A wireless LAN as claimed in claim 3, wherein the software agent is such as to provide data communications to a given mobile communication device using a wireless technology appropriate to the QoS required by that mobile communications device.
6. A wireless LAN as claimed in claim 1, wherein the controller is such as to control the peer-to-peer connection between the first and second mobile communications devices so as to provide the second mobile communications device with the given service from the first mobile communications device using a wireless technology appropriate to the QoS required by the second mobile communications device.
7. A wireless LAN as claimed in claim 6, wherein the controller is such as to register the second mobile communications device with an SIP server associated with the access point by providing that device with an SIP address, whereby that device can subsequently set up the peer-to-peer connection with the first mobile communications device using SIP messages.
8. A method of increasing the QoS of a wireless LAN having an access point and a plurality of mobile communications devices, the method comprising the steps of:

- a) providing data communications from the access point to a plurality of mobile communications devices at a respective QoS requested by each mobile communications device until the transmission bandwidth ceiling of the access point is reached; and
- b) then setting up a peer-to-peer connection from one of the said mobile communications devices to an additional mobile communications device requesting a data communication providing the same service as that provided to said one mobile communications device by the access point.

9. A method as claimed in claim 8, wherein step b) is such that the additional mobile communications device receives said data communication from said one mobile communications device at a QoS requested by the additional mobile communications device or at the highest QoS available from said one mobile communications device.

10. A method as claimed in claim 8, wherein the access point includes plural wireless technologies for data communication with mobile communications devices, the method further comprising the step of choosing the appropriate wireless technology for data communications from the access point to the mobile communications devices for the QoS requested by said devices.

11. A method as claimed in claim 10, wherein each of the mobile communications devices includes plural wireless technologies for data communication, the method further comprising the step of selecting the best wireless technology for a peer-to-peer connection from a given one of the said mobile communications device to the additional mobile communications devices in dependence upon the QoS requested by said additional mobile communications device.

12. A method as claimed in claim 8, further comprising the step of registering said additional mobile communications device with an SIP server associated with the access point so that said additional mobile communications device is supplied with an SIP address, the provision of the SIP address enabling communication between the additional mobile communications device and the SIP server and between the additional mobile communications device and said one mobile communications device to set up the peer-to-peer connection between said two mobile communications devices.

13. A method as claimed in claim 12, wherein communication between said mobile communication devices in setting up the peer-to-peer connection is conducted using SIP messages.

14. A method as claimed in claim 12, wherein registration of said additional mobile communications device with the SIP server is achieved using DHCP.
15. A wireless LAN comprising an access point, a plurality of mobile communications devices requiring data communication with the access point, and a controller for controlling the supply of data communication to the mobile communications devices, the controller being arranged to set up a peer-to-peer connection between a first mobile communications device for receiving a data communication supplying a given service and a second mobile communications device requiring that service.
16. A wireless LAN comprising an access point, a plurality of mobile communications devices requiring data communication with the access point, and a controller for controlling the supply of data communication to the mobile communications devices, the controller being such as to set up a peer-to-peer connection between a first mobile communications device for already receiving a data communication supplying a given service and a second mobile communications device requiring that service, wherein the controller includes a software agent associated with the access point, and wherein the controller is such as to control the peer-to-peer connection between the first and second mobile communications devices so as to provide the second mobile communications device with the given service from the first mobile communications device using a wireless technology appropriate to the QoS required by the second mobile communications device.
17. A method of increasing the QoS of a wireless LAN having an access point and a plurality of mobile communications devices, the method comprising the steps of:
- a) providing data communication from the access point to plural mobile communications devices at a respective QoS requested by each mobile communications device until the transmission bandwidth ceiling of the access point is reached; and
 - b) setting up a peer-to-peer connection from one of said mobile communications devices to an additional mobile communications device requesting a data communication providing the same service as that provided to said one mobile communications device by the access point, said peer-to-peer connection being such that the additional mobile communications device receives said data communication from said one mobile communications device at a QoS requested by the additional mobile communications device or at the highest QoS available from said one mobile communications device.
18. A method of increasing the QoS of a wireless LAN comprising an access point and plural mobile communications devices, the method comprising the steps of:

a) providing data communication from the access point to plural mobile communications devices at a respective QoS requested by each mobile communications device until the transmission bandwidth ceiling of the access point is reached; and

b) setting up a peer-to-peer connection from one of the said mobile communications devices to an additional mobile communications device requesting a data communication providing the same service as that provided to said one mobile communications device by the access point; wherein each of the mobile communications devices includes plural wireless technologies for data communication, and the method further comprises the step of selecting the best wireless technology for said peer-to-peer connection in dependence upon the QoS requested by said additional mobile communications device.

19. A method of increasing the QoS of a wireless LAN having an access point and plural mobile communications devices, the method comprising the steps of:-

a) providing data communications from the access point to a plurality of mobile communications devices at a respective QoS requested by each mobile communications device until the transmission bandwidth ceiling of the access point is reached;

b) then setting up a peer-to-peer connection from one of the said mobile communications devices to an additional mobile communications device requesting a data communication providing the same service as that provided to said one mobile communications device by the access point; and

c) registering said additional mobile communications device with an SIP server associated with the access point so that said additional mobile communications device is supplied with an SIP address, the provision of the SIP address enabling communication between the additional mobile communications device and the SIP server and between the additional mobile communications device and said one mobile communications device to set up the peer-to-peer connection between said two mobile communications devices.